

CLAIMS

- 1 A salinity monitoring device (40) for a well (10) including a casing (9), the  
device being housed in the casing and comprising an electrical cable (5)  
having a sheath (6) containing a plurality of conducting wires (7) therein, one  
5 end of each wire being connected to an electrode (8), and the other end of each  
wire being electrically coupled either to a measurement device (3) or to an  
electrical current generator (1), characterized in that the housing is formed  
from an electrically insulating material and includes apertures (21) distributed  
on the major portion of its length, and in that the spacing between consecutive  
10 electrodes (8) is sufficiently large that electrical effect measured thereby are  
influenced by water surrounding the well beyond the casing (9).
- 2 A device as claimed in claim 1, wherein the spacing of the electrodes is greater  
than one meter.
- 15 3 A device as claimed in claim 1 or 2, wherein one end of each wire is connected  
via a switching system (2) either to the current generator (1) or to the  
measurement device (3).
- 20 4 A device as claimed in any of claims 1, 2 or 3, wherein the electrodes (8) are  
secured on the outside of the cable (5).
- 5 A device as claimed in claim 4, wherein the outside of the cable (5) has a  
device (20, 20') for measuring the local salinity of water in the well located  
25 thereon.
- 6 A device as claimed in claim 5, wherein the device (20, 20') for measuring  
local salinity comprises electrodes (15, 15') located inside a housing (16)  
secured to the cable (5).
- 30 7 A device as claimed in claim 5 or 6, wherein the electrodes (15) for measuring  
local salinity are secured on the sheath (6) of the cable (5).

- 8      A device as claimed in claim 6, wherein the electrodes (15') for measuring local salinity are secured to the housing (16).
- 5      9      A device as claimed in any of claims 5 – 8, wherein the device for measuring local salinity (20) is secured to the cable (5) by means of rings (17) clamped on the cable (5), spokes (18) being provided to secure the housing (16) to the ring (17).
- 10      10      A well (10) comprising a device (40) as claimed in any preceding claim.
- 11      The use of a device as claimed in any of claims 1 – 9 for measuring the salinity of water in an underground formation surrounding a well.